This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 **(previously canceled)**

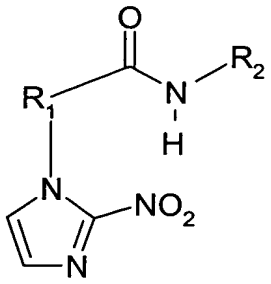
Claim 2 **(previously canceled)**

Claim 3 **(previously canceled)**

Claim 4 **(previously canceled)**

Claim 5 **(previously canceled)**

Claim 6 **(currently amended)** A method for the synthesis of a [^{18}F]-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2CY_3$ where X is halogen or hydrogen and Y is fluorine, comprising

(1) perfluroinating a first intermediate which is ana amino acid derivative which is N-protected by an imido group or a synthetically equivalent group having a carboxyl function

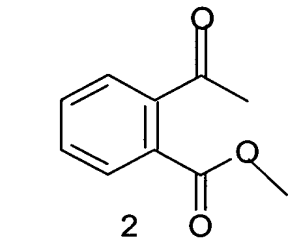
transformed into a dithioester function or a synthetically equivalent persulphurated moiety thereby obtaining a [^{18}F]-labeled perfluorinated amino acid derivative which is N-protected by an imido group or a synthetically equivalent group as a second intermediate and

(2) deprotecting the nitrogen function of said second intermediate, resulting in a [^{18}F] labeled perfluoroalkyl amine derivative, and coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F] labeled perfluoroalkyl amine derivative.

~~A method according to claim 35, wherein said coupling is a classical peptide coupling using a derivative of 2-(2-nitro-imidazol-1-yl) acetic acid in which the OH group of the carboxyl function has been replaced by a good leaving group.~~

Claim 7 **(currently amended)** A method for the synthesis of a compound according to claim 6 ~~31~~, comprising ~~the steps of~~:

a) adding a THF solution of a compound of formula 2 to a suspension of PYBOP in THF followed by Et3N,



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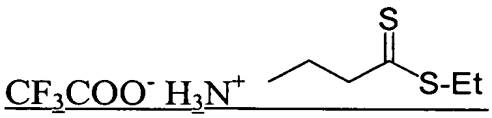
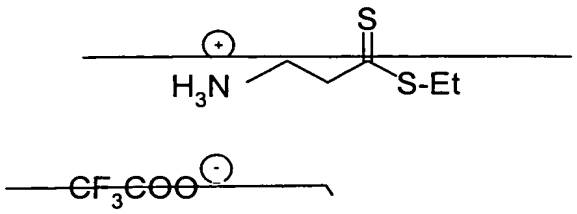
b) adding an amine of formula 1 and Et_3N to the solution obtained in step (a),





c) adding a catalytic amount to the solution obtained in step (b) of pTsOH and refluxing the solution,

d) cooling the solution obtained after step (c) at ambient temperature and adding a sodium bicarbonate solution,

e) extracting the product obtained after step (d) with ethyl acetate and drying and concentrating the product with ethyl acetate,

f) purifying the residue obtained after step (e) by column chromatography on silica gel,

g) removing traces of water by washing the product of step (f) with trifluoroacetic anhydride,

h) reacting ~~said~~ a persulphurated derivative obtained from step (g) with a suitable labeled perfluorinating agent and a suitable oxidant resulting in a compound having a high yield of fluor atom incorporation,

i) deprotecting the nitrogen function, resulting in a perfluoroalkyl amine derivative, and

j) coupling the perfluoroalkyl amine derivative obtained in step (i) with an activated form of 2-(2-nitro-imidazol-1-yl) acetic acid, resulting in the [18F]-labeled ~~or~~ perfluorinated-nitroaromatic compound.

Claim 8 **(original)** A method according to claim 7 wherein hydrogen fluoride/pyridine complex (HF-Pyridine) is used as a perfluorinating agent and 1,3-dibromo-5,5-dimethylhydantoin (DBH) is used as an oxidant resulting in a compound having a high yield of fluor atom incorporation.

Claim 9 **(cancel)**

Claim 10 **(withdrawn)** A first intermediate compound having the general formula of an amino acid derivative which is N-protected by an imido group or a synthetically equivalent group and wherein the carboxyl function has been transformed into a dithioester function or a synthetically equivalent persulphurated moietyl.

Claim 11 **(withdrawn)** A first intermediate compound according to claim 10, wherein the imido group is a phthalimido group.

Claim 12 **(withdrawn)** A first intermediate compound according to claim 10, obtainable via steps a to g of the method of the invention.

Claim 13 **(withdrawn)** A first intermediate compound according to claim 10, being ethyl 3-(N-phthalimido)-aminopropanedithioate, N-3,3,3-trifluoro-2-thioxopropyl) phthalimide, N-{[2-(trifluoromethyl)-1, 3-dithiolan-2-yl] methyl} phthalimide, methyl(or ethyl) 3-phthalimide-2,2-difluoropropanedithioate, N-[2,2-difluoro-3,3,3-tris(methylthio) propyl] phthalimide or N-[2,2-difluoro-3,3,3-tris(ethylthio)propyl] phthalimide.

Claim 14 **(withdrawn)** A second intermediate compound having the general formula of a [^{18}F]-labelled perfluorinated amino acid derivative which is N-protected by an imido group or a synthetically equivalent group.

Claim 15 **(withdrawn)** A second intermediate compound according to claim 14, wherein the imido group is a phthalimido group.

Claim 16 **(withdrawn)** A second intermediate compound according to claim 14, obtainable via steps a to h of the method of the invention.

Claim 17 **(withdrawn)** A second intermediate compound according to claim 14, being N-(3,3,3-trifluoropropyl)phthalimide.

Claim 18 **(withdrawn)** A third intermediate compound having the general formula of a [^{18}F]-labelled perfluoroalkyl amime.

Claim 19 **(withdrawn)** A third intermediate compound according to claim 18, being [^{18}F]-labelled 3,3,3-trifluoropropyl amime.

Claim 20 **(withdrawn)** A third intermediate [^{18}F]-labeled compound obtainable via steps a to i of the method of the invention.

Claim 21 **(cancelled)**

Claim 22 **(withdrawn)** A [^{18}F] labeled bioactive compound synthesized using as intermediates a first and third intermediate as claimed in claim 10, a second intermediate having the general formula of a [^{18}F]-labeled perfluorinated amino acid derivative which is N-protected by an imido group or a synthetically equivalent group.

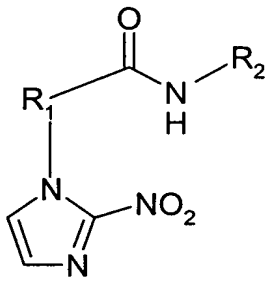
Claim 23 **(withdrawn)** A [^{18} F] labeled bioactive compound synthesized using as intermediates a first intermediate as claimed in claim 10.

Claim 24 **(withdrawn)** Method of perfluorination using as an intermediate a compound as claimed in claim 10.

Claim 25 **(withdrawn)** The compound of claim 22 which is an [^{18}F]-labeled perfluorinated nitroimidazole compound having an incorporation of [^{18}F] atoms characterized by a specific radioactivity of the compound comprised between 1 and 30 Ci/mmol, preferably between 1 and 20 Ci/mmol, preferably 1 and 10 Ci/mmol.

Claim 26 **(currently amended)** A method for the detection of tissue hypoxia in a patient comprising:

- producing according to the method of claim 6 a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative according to the method of claim 6;

~~- introducing an [^{18}F] labeled nitroimidazole compound of claim 31 into said patient,~~

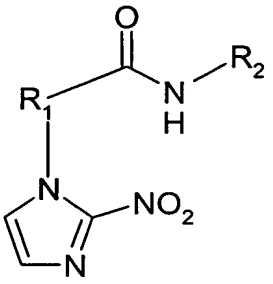
~~- imaging tissue hypoxia in said patient, and~~

- quantifying tissue hypoxia in said patient by imagining said patent after having introduced said [^{18}F] labeled nitromidazole compound into said patient.

Claim 27 **(original)** A method according to claim 26 wherein the detection technique used in said method is positron emission tomography.

Claim 28 **(currently amended)** A method for the detection of tissue hypoxia in a tissue comprising:

- producing according to the method of claim 6 a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

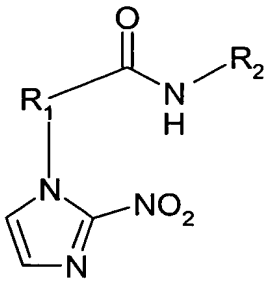
- introducing ~~an~~ said [^{18}F] labeled nitroimidazole compound of claim 6 ~~31~~ into a patient,

-removing a tissue sample from said patient, and

-analysing the emission in said tissue sample by autoradiograohy.

Claim 29 **(currently amended)** A method for the detection of an [^{18}F] labeled bioactive compound in a patient comprising:

- producing according to the method of claim 6 a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

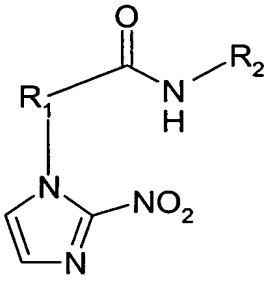
- introducing ~~an~~ said [^{18}F] labeled bioactive compound according to claim 6 ~~31~~ into said patient,

- imaging the presence of said [^{18}F] labeled bioactive compound in said patient, and

-optionally, quantifying the presence of said [^{18}F] labeled bioactive compound in said patient.

Claim 30 **(currently amended)** A method for the detection of [^{18}F] labeled bioactive compound in a tissue comprising:

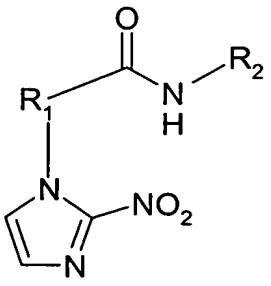
- producing according to the method of claim 6 a [^{18}F-labeled perfluorinated-nitroaromatic compound having the formula:



wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2\ CY_3$ where X is halogen or hydrogen and Y is fluorine by coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative;

- introducing an [^{18}F] labeled bioactive compound of claim 6 ~~31~~ into a patient,
- taking a tissue sample from said patient, and
- analysing the emission in said tissue sample by autoradiography.

Claim 31 **(currently amended)** A method according to claim 6, wherein said coupling is a classical peptide coupling using a derivative of 2-(2-nitro-imidazol-1-yl) acetic acid in which the OH group of the carboxyl function has been replaced by a good leaving ~~A method for the synthesis of a [^{18}F] labelled perfluorinated nitroaromatic compound having the formula:~~



~~wherein R_1 is CH_2 and R_2 is an alkyl group having up to about 6 halogen atoms, wherein said alkyl group has the formula $CHXCX_2$-CY_3 where X is halogen or hydrogen and Y is fluorine, comprising coupling 2-(2-nitro-imidazol-1-yl) acetic acid with a [^{18}F]-labeled perfluoroalkyl amine derivative.~~

Claim 32 **(currently amended)** A method according to claim 6 ~~31~~, wherein the compound has a specific radioactivity of 1 ~~and~~ to 30 Ci/.

Claim 33 **(currently amended)** A method according to claim 6 ~~31~~, wherein the compound has the formula 2-(2-nitro-1H-imidazol-1-yl)-N-(3,3,3-trifluoropropyl) acetamide ([^{18}F]-EF3).

Claim 34 **(currently amended)** A method according to claim 6 ~~32~~, wherein the compound has the formula 2(2-nitro-1H-imidazol-1-yl)-N-2,2,3,3,3-pentafluoropropyl) acetamide ([^{18}F]-EF5).

Claim 35 **(canceled)**